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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,348	02/23/2004	Katsuyuki Nakano	4775-00006	2313

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EXAMINER

NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/784,348	Applicant(s) NAKANO ET AL.	
	Examiner Cam N. Nguyen	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01/23/06 (*an election*).  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
     4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-11 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on originally filed is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### **Election/Restrictions**

1. Applicant's election without traverse of Group I, claims 1-11, in the reply filed on January 23, 2006 is acknowledged.
2. Claims 12-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention(s), there being no allowable generic or linking claim. Election was made without traverse in the reply filed on January 23, 2006.

### **Claim Objections**

3. Claims 1 & 7 are objected to because of the following informalities:
  - A. It is suggested that applicants amend claim 1 reciting positive process steps because the way the process steps presented is very confusing and difficult to follow. The following is suggested: for example, ...said method comprising: preparing a metal carrying step..., reducing the metal carried on titania...by hydrogen..., and oxidizing ...
  - B. In claim 1, line 1, "having" is suggested changed to --comprising--.
  - C. In claim 1, line 2, "with" is suggested changed to --having--.
  - D. In claim 7, line 3, --the-- should be inserted before "weight".Appropriate correction is required.

**Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deeba et al., "hereinafter Deeba", (US Pat. 5,145,825) taken together with Foster et al., "hereinafter Foster", (US Pat. 4,076,792).

Deeba discloses a sulfur-resistant oxidation catalyst comprising silica, a coating of titania or zirconia or a mixture thereof or precursors of said oxides on said silica and at least one precious metal supported on said coated silica (see col. 9, claim 1). Said silica is in the form of a silica particle (see col. 9, claim 5). The titania or zirconia coating is applied a titanium or zirconium salt which is calcined in an oxygen-containing gas to form the respective metal oxide (see col. 10, claim 6). Said precious metal is platinum (see col. 10, claim 8). Deeba further discloses that the amount of titania and zirconia should comprise greater than 5 wt.% of the stabilized silica for improved heat stability (see col. 4, ln 3-8). The precious metal component on the stabilized silica is preferably in an amount of from about 0.1 to 3% by weight based on the weight of the catalyst (see col. 4, ln 25-28). Also, see the Examples in the Deeba reference.

Regarding claims 1-9, the difference between claimed process and that disclosed by Deeba, is that Deeba does not disclose the reducing step.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated by adding such known reducing step to the process of Deeba because Foster fairly suggests that the tendency of catalysts (similar to Deeba's catalyst) to produce ammonia as a by-product can be reduced by firing the catalytic unit to 800-900°C for about 24 hours prior to use, and by keeping the catalyst loading below about 0.2% by weight (see Foster at col. 8, ln 50-64 & col. 12, claim 1-3). Further, it is conventional and known in the art to reduce the noble metal compounds to metallic form catalyst.

Regarding claim 10, while Deeba does not disclose the impregnation step as being claimed, however, it is known in Foster to prepare titania coating on the substrate by hydrolysis using titanium tetraisopropoxide (see Foster at col. 5, Example 1, specifically at ln 22-29). Thus, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated this step into the process of Deeba in order to achieve a useful and effective catalyst material because it is known in Foster to do so.

**Claim Rejections - 35 USC § 102(b)/103**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gonzalex-Martin et al., "hereinafter Gonzalex-Martin", (US Pat. 6,136,186).

Gonzalex-Martin discloses a photocatalyst comprising a substrate having a photocatalytic surface, which is a porous titanium dioxide based binary oxide surface,  $\text{TiO}_2/\text{SiO}_2$  (see col. 16, claims 1 & 6). The substrate comprises a photocatalyst supported on a plurality of particles, wherein the particles are made of silica materials including silica beads (see col. 17, claims 4-5). The photocatalyst further containing a metal catalyst, which is selected from a group of metals including the claimed platinum group metals (see col. 17, claims 20-21).

Product-by-process limitation in the claim is noted. While the photocatalyst of the reference is not made by the same process, the photocatalyst made is the same as being claimed. Further, since it has been held that the patentability of the product and its method of production are separately determined, the process limitation(s) in the claim(s) have no bearing on the patentability of the claimed product per se. See In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); In re Brown, 173 USPQ 688, 688 (CCPA 1977); In re Fessman, 180 USPQ 324, 326 (CCPA 1977). See also MPEP 2113.

**Citations**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. All references are cited for related art. See PTO-892 Form attached.

**Conclusion**

9. Claims 1-13 are pending. Claims 1-11 are rejected. Claims 12-13 are withdrawn due to nonelected (distinct) invention(s). No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M, W, R, & F, 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen/cnn  
March 19, 2006

  
CAM N. NGUYEN  
PRIMARY EXAMINER

Art Unit: 1754